Descriptions for WSDOT Design Courses

Roadway Geometric Design (BWE)

8:00 am to 4:00 pm. 16 hours

Disciplines
Bridge, Design

Course Description
This course is intended to provide roadway designers with the knowledge and skills to design the geometric elements of highways. Designers will learn how to develop alignments, profiles, and roadway cross-section elements. The focus will be on using WSDOT's Design Manual as a reference to help make engineering decisions.

Learning Objectives
Upon completion of this course participants will be able to:
1. Determine the appropriate standards for geometric elements within a specific project type,
2. Develop alignments and profiles which complement each other,
3. Analyze sight distances,
4. Select the appropriate super elevation rates, and design super elevation runoffs.

Prerequisites
A good understanding of technical mathematics is needed for this course.

Course Comments
Attendees: Entry-level Technicians & Engineers from Design Offices. A calculator with trigonometric functions and an English Design Manual are required for this class. A Field Engineering handbook is optional.

Roadside Safety (B74)

8:00 am to 4:00 pm. 16 hours

Disciplines
Bridge, Construction, Design

Course Description
The 2-day course will offer participants an understanding of roadside safety. Course content includes clear zone concepts and the need for providing a safe roadside environment for the traveling public. Hazard identification and mitigation including the design and application of traffic barrier and attenuation systems will also be covered. A focus on the information in the WSDOT Design Manual and Standard Plans is included in the course.

Learning Objectives
Upon completion of the course participants will be able to:
1. Understand the importance of providing a safe roadside environment,
2. Understand & apply the roadside clear zone concept,
3. Identify roadside hazards & select proper mitigation measures,

4. Calculate barrier length of need,
5. Understand various traffic barrier applications,
6. Identify & select appropriate impact attenuator systems.

Prerequisites: None

Course Comments
Attendees: Technicians and engineers from design and construction. Please bring a WSDOT Design Manual, Standard Plans, and calculator to class. A test will be given at the end of the class. A score of 70% or higher is passing.

Managing Project Delivery (B71)

8:00 am to 4:00 pm. 16 hours

Disciplines
Bridge, Construction, Design, Environmental, Real Estate

Course Description
This course will provide participants the opportunity to learn skills and tools for the application of the WSDOT Managing Project Delivery (MPD) process (Design Manual Chapter 140) to enhance the effective delivery of projects. Through lectures, class discussion, and exercises, using an actual project, participants will learn a number of critical project management factors including the following: project initiation, team building, inclusion of customers in the project delivery process, the importance of developing comprehensive, realistic, and deliverable project schedules and work plans, measuring success, managing, customer expectations, and anticipating, actively recognizing and managing change. Emphasis is on teamwork, risk, resource and change management all as part of a comprehensive project management process. The class is structured around a simulation of a project team setting and is conducted in a fast paced, real world, format that engages all participants.

Learning Objectives
Upon completion of this course, participants will be able to:
1. Initiate and align a project team,
2. Use the Master Deliverables List (MDL) to develop a work breakdown structure,
3. Develop a project work plan,
4. Assess project risk,
5. Obtain endorsement of the project work plan,
6. Manage Scope, Schedule, and Budget,
7. Manage Change,
8. Conduct an effective project closure.

Prerequisites: None

Course Comments
Attendees: All staff involved with capital projects. Read Design Manual Chapter 140. It can be found at http://www.wsdot.wa.gov/eesc/design/policy/DMChapters1.htm

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WSDOT Interchange Design (CFU)

8:00 am to 4:00 pm. 8 hours

Disciplines
Bridge, Design

Course Description
This course is intended to provide roadway designers with the knowledge and skill to design highway interchanges. Topics presented will include interchange geometrics, ramp design, and other issues. The focus will be on using WSDOT's Design Manual as a reference to help make engineering decisions.

Learning Objectives
Upon completion of this course participants will be able to:
1: Identify the various interchange types & their related conflict points,
2. Select & use the appropriate ramp taper design,
3. Analyze weaving distances.

Prerequisites
Roadway Geometric Design (course code BWE) & a minimum of 1 year experience in design are recommended.

Course Comments
A calculator with trigonometric functions & a current English Design Manual are required for this class.

Intersection & Pedestrian Design (CBD)

8:00 am to 4:00 pm. 8 hours

Disciplines
Design, Planning

Course Description
This course is intended to provide roadway designers with the knowledge and skill to design highway intersections. Topics presented will include intersection geometrics, sight distance, pedestrian design issues, & roadway approach design. The focus will be on using WSDOT's Design Manual as a reference to help make engineering decisions.

Learning Objectives
Upon completion of this course participants will be able to:
1. Identify the various intersection types & their related conflict points,
2. Select & use the appropriate design vehicle during the design process,
3. Analyze sight distances,
4. Incorporate pedestrian facilities & road approaches in the design where needed.

Prerequisites
Roadway Geometric Design (course code BWE) is recommended.

Course Comments
Attendees: Technicians & engineers from Design Offices. A calculator with trigonometric functions & an English Design Manual are required for this class.
